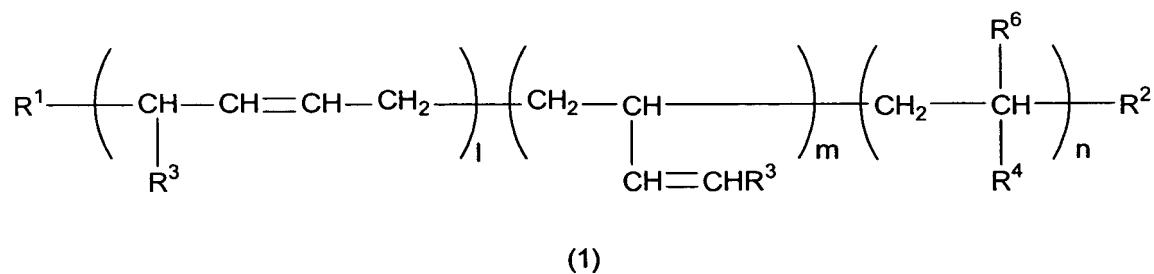


CLAIMS

1. A modified diene- α -olefin copolymer which is represented by the formula (1) below and has $H_2C=C(R^5)-COO^-$ in 5 at least a part of the ends,



wherein R^1 and R^2 independently represent a hydroxyl group or 10 $H_2C=C(R^5)-COO^-$, R^3 's, R^5 's, and R^6 's independently represent a hydrogen atom or an alkyl group having 1 to 10 carbon atoms, R^4 's independently represent a phenyl group, a pyridyl group, a chlorine atom, a cyclohexyl group, or a carbonyloxyalkyl group, and l , m , and n represent the number of repetition.

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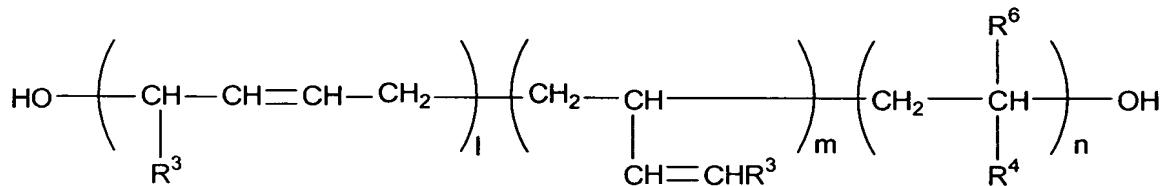
2. The modified diene- α -olefin copolymer according to claim 1, having a number average molecular weight of 300 to 10,000.

20 3. The modified diene- α -olefin copolymer according to claim 1, wherein the amount of α -olefin compounds is 1 to 90 mol% in the total amount of the copolymer.

4. The modified diene- α -olefin copolymer according to
claim 1, wherein the proportion of the end with a structure of
 $H_2C=C(R^5)-COO^-$ is 20 to 100 mol% of the total end groups.

5 5. The modified diene- α -olefin copolymer according to
claim 1, wherein the R^4 is a phenyl group.

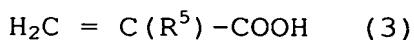
6. A method for producing the modified diene- α -olefin
copolymer according to claim 1, comprising reacting a
10 diene- α -olefin copolymer shown by the following formula (2)
with an unsaturated carboxylic acid shown by the following
formula (3) or a derivative thereof, adding 1 mg to 1 g of a
radical scavenger per 100 g of the copolymer,



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(2)

wherein R^3 's and R^6 's independently represent a hydrogen atom or
an alkyl group having 1 to 10 carbon atoms, R^4 's independently
represent a phenyl group, a pyridyl group, a chlorine atom, a
20 cyclohexyl group, or a carbonyloxyalkyl group, and l , m , and
 n represent the number of repetition,



wherein R⁵ is a hydrogen atom or an alkyl group with 1 to 10 carbon atoms.

5 7. The method for producing the modified diene- α -olefin copolymer according to claim 6, wherein the diene- α -olefin copolymer is reacted with the unsaturated carboxylic acid or a derivative thereof in a solvent, the concentration of the copolymer in the solvent being 50 wt% or less.